

Work Order ID 143621

March 17, 2016 10:22:01 AM

143621

Page 1

Item ID: D4407-041 Accept ***N900040100*** Setup Start ***NS1***
 Revision ID: Stop ***NS2***
 Item Name: Bar Weldment
 Start Date: 3/21/2016 Start Qty: 10.00 ***10*** Cust Item ID:
 Required Date: 3/24/2016 Req'd Qty: 10.00 ***10*** Customer:
 Reference: **20160317**

Approvals: Process Plan: SK Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
D4407	D								

100 0.00
100
 Cold Saw Memo 0.00 x10 me 16-04-01
 Hyd Mech Cut blanks at 66.75"
 (EXTRA MATL WILL BE TRIM OFF AT D4406-041 ASSY)

110 0.00
110
 autoweld 1 Memo 0.00 10 a 16-3-31
 Automated Welding 1 ***SEE NOTE 8 FOR SURFACE BUILDUP***
 1- WELD AS PER DWG AND QSI004 4.5
 FOR AUTOMATED WELDING USE 8259 HARDCOAT
 BATCH: 14444

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coor. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date : _____	Step #: _____	QTY Effective : _____		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition			
				Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
OTHER : ☐					

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date : _____	Step #: _____	QTY Effective : _____		MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval	
Description Work Order Deviation		Disposition			
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
		OTHER : ☐ _____			

March 17, 2016 10:22:01 AM

Item ID: D4407-041

Accept

N900040100

Setup Start *NS1*

Revision ID:

Item Name: Bar Weldment

Stop *NS2*

Start Date: 3/21/2016 **Start Qty:** 10.00

10

Cust Item ID:

Required Date: 3/24/2016 **Req'd Qty:** 10.00

10

Customer:

Reference:

Approvals: **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____

Run Start *NR1*

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop *NR2*

Sequence ID/
Work Center ID

Operation Description

Set Up/ Run Hours

Tool ID

Tool #**Plan
Code**

**Accept
Qty**

Reject
Qty

Reject Number

**Insp.
Stamp**

150

QC21- Final Inspection - Work Order Release

0.00

150

QC

Memo

0.02

Quality Control

MLJ APR 05 2016

MLJ APR 05 2016

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date : _____	Step #: _____	QTY Effective : _____		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
☐ OTHER : _____					

Picklist Print

March 17, 2016 10:22:06 AM

Page 1

Work Order ID: 143621

143621

Parent Item: D4407-041

D4407-041

Parent Item Name: Bar Weldment

Start Date: 3/21/2016

Required Date: 3/24/2016

Start Qty: 10.00

Required Qty: 10.00

Comments: IPP REV:A 15.11.16 NEW ISSUE DD VERF:JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
M304B0.250x0.500		Purchased	No				f	811.4103		58.52632			

M304B0 250x0 500

304 BAR .250 x .500

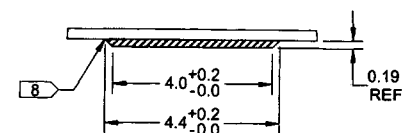
EL 16-3-31

Location	Loc Qty	Loc Code
MAT	46.909	
133276	10.979	
m133175	7.93	
m134172	28	
MAT009	284.5013	
m129366	18.967	
m131748	20.949	
m132332	48.5333	
m133121	12	
m133417	56.885	
m133526	11.167	
m133596	48	
m134099	8	
m134506	60	
WA002	480	
m133923	480	

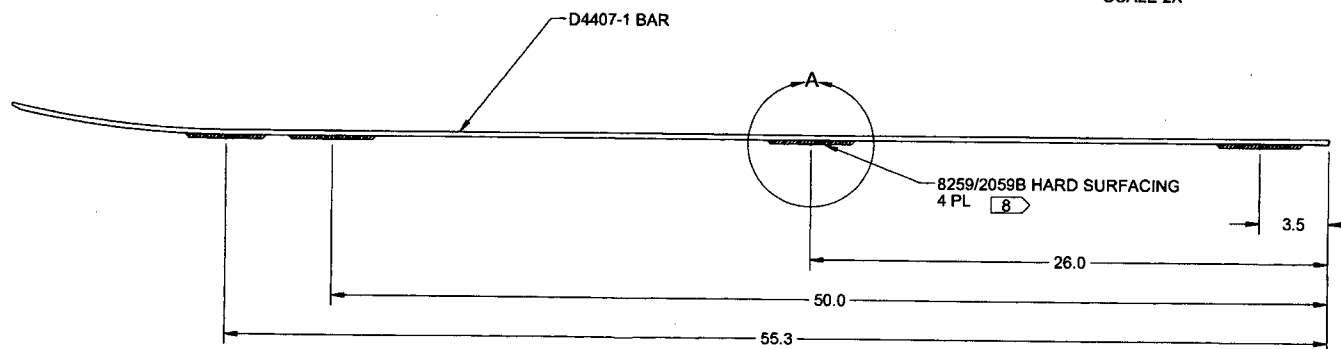
*60**

ITEM	QTY -041	P/N	DESCRIPTION
	X	D4407-041	BAR WELDMENT
1	1	D4407-1	BAR
2	A/R	8259/2059B	HARD SURFACING

△



DETAIL A △
4 PL
SCALE 2X



D4407-041 BAR WELDMENT △

NOTES:

- 1) MATERIAL: N/A
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: N/A
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: 2.88 lbs
- 8) BUILDUP HARD SURFACING 0.18 - 0.20 THICK USING 8259 ROD PER QSI 004 SECTION 4.5 (AUTOMATED WELDING) OR BUILDUP HARD SURFACING 0.19 - 0.25 THICK USING 2059B ROD PER QSI 004 SECTION 4.1 (MANUAL WELDING)

△

20160317

SH 143621

RELEASED
2016-02-08
ECN 16-518

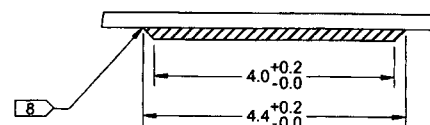
APPROVED

D	ADD D4407-041/-043 WELDMENTS, RE-DESIGN D4407-1/-3, ADD NOTE 8 (SH 1.2 AUTOMATED WELDING), DELETE NOTE 8 (SH 3&4)	DB	15.10.13
C	REDESIGNED WITH SHORTER CUTS. NOTE 8 ADDED. B4-2, B4-3 0.18 WAS 0.13 (REF NCR12-2031)	AJS	13.03.11
B	REMOVE TOOLING HOLES FOR -1/-3; RE-DESIGN D4407-3	RF	12.01.30
A	NEW ISSUE	RF	11.08.15
REV.	DESCRIPTION	BY	DATE
DESIGN	RF	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	DB		
CHECKED	ML		
MFG. APPR.	DD		
APPROVED	WM		
DE APPR.	DS	D4407 BAR	
DATE	15.10.13	REV. D SHEET 1 OF 4 SCALE NTS	

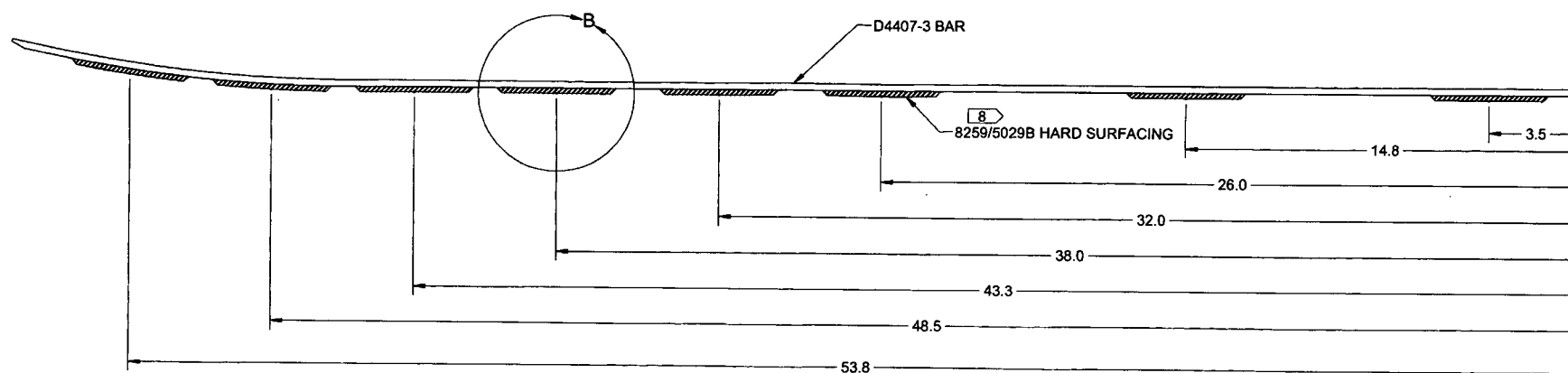
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ITEM	QTY -043	P/N	DESCRIPTION
	X	D4407-043	BAR WELDMENT
1	1	D4407-3	BAR
2	A/R	8259/2059B	HARD SURFACING

△ D



DETAIL B △
8 PL
SCALE 2X



△ D **D4407-043 BAR WELDMENT**

NOTES:

- 1) MATERIAL: N/A
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: N/A
- 6) IDENTIFICATION: IDENTIFY PER QSI 044 6.1
- 7) WEIGHT: 3.12 lbs
- 8) BUILDUP HARD SURFACING 0.18 - 0.20 THICK USING 8259 ROD PER QSI 004 SECTION 4.5 (AUTOMATED WELDING) OR BUILDUP HARD SURFACING 0.19 - 0.25 THICK USING 2059B ROD PER QSI 004 SECTION 4.1 (MANUAL WELDING)

RELEASED
2016-02-08
APPROVED

DESIGN	RF	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	DB		
CHECKED	ML	DRAWING NO. D4407	REV. D
MFG. APPR.	DD		SHEET 2 OF 4
APPROVED	WM	TITLE BAR	SCALE NTS
DE APPR.	DS		
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8 7 6 5 4 3 2 1

0.50 REF

1.5
REF

R47.5

10.7

(BEND TANGENT)

D4407-1 BAR
(MAKE FROM D4407-1F) $\triangle$

66.10

D4407-1F BAR $\triangle$

0.10

0.50

DETAIL C
SCALE 5X

NOTES:

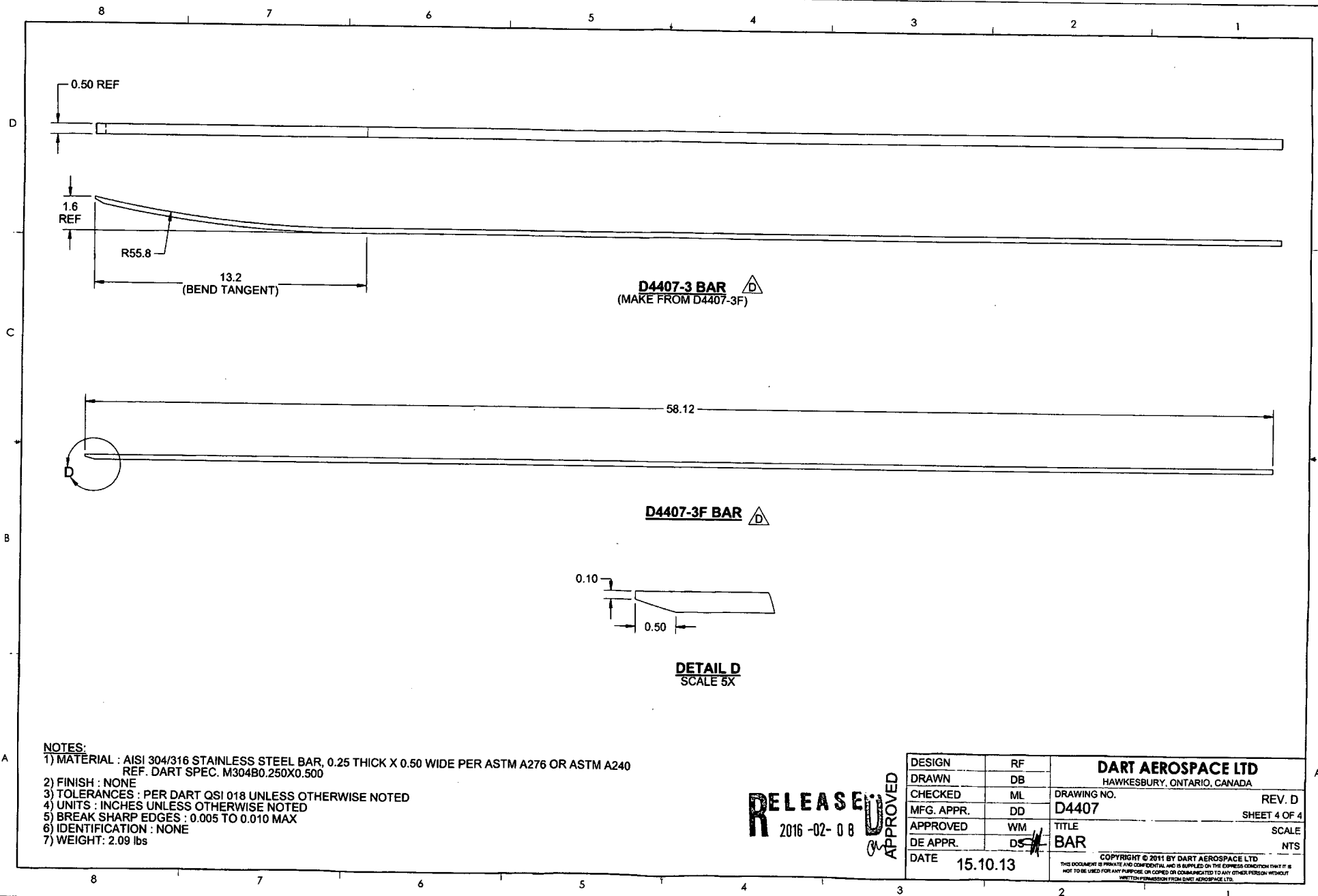
- 1) MATERIAL : AISI 304/316 STAINLESS STEEL BAR, 0.25 THICK X 0.50 WIDE PER ASTM A276 OR ASTM A240
REF. DART SPEC. M304B0.250X0.500
- 2) FINISH : NONE
- 3) TOLERANCES : PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS : INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES : 0.005 TO 0.010 MAX
- 6) IDENTIFICATION : NONE
- 7) WEIGHT : 2.38 lbs

RELEASED
2016-02-08

APPROVED

DESIGN	RF	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	DB		
CHECKED	ML	DRAWING NO.	REV. D
MFG. APPR.	DD	D4407	SHEET 3 OF 4
APPROVED	WM	TITLE	SCALE
DE APPR.	DS	BAR	NTS
DATE	15.10.13	COPYRIGHT © 2011 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

8 7 6 5 4 3 2 1



NOTES:

- 1) MATERIAL : AISI 304/316 STAINLESS STEEL BAR, 0.25 THICK X 0.50 WIDE PER ASTM A276 OR ASTM A240
REF. DART SPEC. M304B0.250X0.500
- 2) FINISH : NONE
- 3) TOLERANCES : PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS : INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES : 0.005 TO 0.010 MAX
- 6) IDENTIFICATION : NONE
- 7) WEIGHT: 2.09 lbs

RELEASE 2016-02-08

APPROVED

DESIGN	RF	DART AEROSPACE LTD	
DRAWN	DB	HAWKESBURY, ONTARIO, CANADA	
CHECKED	ML	DRAWING NO.	REV. D
MFG. APPR.	DD	D4407	SHEET 4 OF 4
APPROVED	WM	TITLE	SCALE
DE APPR.	DS	BAR	NTS
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